

**Talib DBOUK** (Professor - Full) **Computational Physics & Applied Sciences**  
[University of Rouen-Normandy](#) Research, Development & Innovation E-mail: [talib.dbouk@univ-rouen.fr](mailto:talib.dbouk@univ-rouen.fr)  
[CORIA, CNRS UMR 6614](#)  
[IUT Rouen](#)

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## ● SKILLS

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### ● Techniques

- Physics, Mechanics of Fluids and Complex Materials, Heat and Mass Transfer, Biofluids, Turbulence, Rheology, Adsorption and Tribology.
- Numerical Analysis, Numerical Modeling, Topology Optimization, Fluid/Structure Interaction, CFD, Numerical Methods, IBM, The Finite Volume Method, ODE, PDE, Non-linear Programming, Convex Analysis, Adjoint Methods, Development of computational codes in CFD, User-Machine Interfaces.
- Artificial Intelligence, Deep and Machine Learning
- Microscopy, Rheometry, Normal Stresses, Suspensions of Particles, and Migration.

### ● Communications

- Coordination and management of R&D projects
- National and International scientific collaborations
- Bibliographical Research
- Writing of advanced technical and progress reports
- Interaction with academia and industry
- International Conferences and scientific publications in high-impact journals (see next page)
- Reviewer of many scientific journals (i.e. JFM, JNNFM, PoF, SAMO, JHMT, CEJ, ChERD, Energy, ATE, etc)

### ● Informatics

- Linux®.
- C++®, C®, Fortran®, Python®.
- OpenFOAM®, StarCCM+®, gms®.
- FreeCAD®, Blender®.
- TensorFlow®, Keras®.

### ● Languages

- Arabic (*Native*)
  - English (fluent)
  - French (fluent)
  - Scientific English
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## ● PROFESSIONAL EXPERIENCE

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| Oct. 2022 – Present<br>Rouen, France          | <b>Professor (Full):</b> <a href="#">University of Rouen-Normandy</a> <a href="#">CORIA</a> <a href="#">IUT</a><br><b>Professor, Computational Physics &amp; Applied Sciences</b><br><b>Energy, Chemical &amp; Process Engineering, Optimization</b> |
| Sep. 2021 – Sep. 2022<br>Lille, France        | <b>Associate Professor (HDR):</b> <a href="#">IMT Nord Europe</a><br><b>Associate Professor, Computational Physics &amp; Applied Sciences</b>  |
| April 2020 – Sep. 2021<br>Nicosia, Cyprus     | <a href="#">University of Nicosia</a><br><b>Defence and Security Research Institute (DSRI)</b><br><b>Senior Researcher, Research Director of DSRI, Medical School (Joint-Position)</b>   |
| Sept. 2014 – Mar. 2020<br>Lille-Douai, France | <b>Associate Professor (HDR):</b> <a href="#">IMT Nord Europe</a><br><b>Topology Optimization in CFD, Fluid Mechanics and Heat Transfer.</b>   |
| Sept. 2013 – Aug. 2014<br>St-Paul-Lez-Durance | <b>PostDoc:</b> <a href="#">IRSN - Saint Paul Lez Durance</a><br><b>Rheology of immersed granular materials in presence of Hydrodynamic interactions.</b>  |
| Jan. 2012 – June 2013<br>Sophia Antipolis     | <b>PostDoc:</b> <a href="#">CEMEF - Mines ParisTech</a> ↔ <a href="#">Arcelormittal</a><br><b>Study and Development of scientific calculation codes (Fast-Models) for industrial strip rolling processes with lubrication.</b>                       |
| Oct. 2008 – Dec. 2011<br>Nice, France         | <b>PhD thesis :</b> <a href="#">LPMC UMR - CNRS 7336</a><br><b>Rheology of concentrated suspensions and shear-induced particles migration.</b>   |

● **DIPLOMAS**

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- Nov. 2019 :**           **HDR (Habilitation à Diriger des Recherches)**  
Topology Optimization of complex thermofluid flows and systems:  
multiphysics, multiscale, modeling and design.  
[University of Polytechnique Hauts-de-France](https://tel.archives-ouvertes.fr/tel-02493044)  
<https://tel.archives-ouvertes.fr/tel-02493044>
- Dec. 2011 :**           **PhD in Physics**  
Rheology of concentrated suspensions and shear-induced migration  
University of Nice Sophia Antipolis, France. [Cote d'Azur University](https://www.unice.fr/) member.  
Laboratory of Physics of Condensed Matter (LPMC), Physics Institute of Nice, UMR CNRS 7336.  
<https://tel.archives-ouvertes.fr/tel-00673964>
- Oct. 2008 :**           **Masters-II Research in Heat-Energy**  
University of Nantes, École centrale de Nantes, École Polytechnique de Nantes, France.  
LteN Polytech Nantes - UMR CNRS 6607.
- Nov. 2008 :**           **Diploma in Mechanical Engineering**  
Lebanese University, Faculty of Engineering (III), Hadath, Beirut, Lebanon.
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● **PEER-REVIEW: SCIENTIFIC PUBLICATIONS & CONFERENCE PROCEEDINGS**

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**Scientific Articles in peer-reviewed journals**

- T. DBOUK**, A. AJAMI, J. SAWMA, Aeroacoustic footprints of a fixed-wing rotor-propelled UAV drone at different flight patterns around a target, submitted, March (2024).
- K. POULINAKIS, D. DRIKAKIS, I.W. KOKKINAKIS, S.M. SPOTTSWOOD, **T. DBOUK**, "LSTM Reconstruction of Turbulent Pressure Fluctuation Signals", **Computations**, 12 (1), 4 (2024). DOI : <https://doi.org/10.3390/computation12010004>
- H. KARKABA, **T. DBOUK**, C. HABCHI, S. RUSSEIL, T. LEMENAND, D. BOUGEARD, "Multiobjective Optimization of Vortex Generators for Heat Transfer Enhancement in Turbulent Flows", **International Journal of Thermofluids**, 22, 100633, (2024). <https://doi.org/10.1016/j.ijft.2024.100633>
- S. ALI, **T. DBOUK**, M. KHALED, J. FARAJ, D. DRIKAKIS, "Morphing optimization of flow and heat transfer in concentric tube heat exchangers", **Physics of Fluids** 35 (9), 095127, (2023). DOI : <https://doi.org/10.1063/5.0159144>
- T. DBOUK**, F. ROGER, D. DRIKAKIS, S. ALI, H. MENU, E. WIEL, "The impact of endotracheal intubation on oxygen delivery, trachea pressure and wall deformation", **Computers in Biology and Medicine**, 107325, (2023). DOI : <https://doi.org/10.1016/j.combiomed.2023.107325>
- G. WANG, D. WANG, A. LIU, **T. DBOUK**, X. PENG, A. ALI, "Design and performance enhancement of thermal-fluid system based on topology optimization", **Applied Mathematical Modelling** 116, 168-186 (2023). DOI : <https://doi.org/10.1016/j.apm.2022.11.031>
- S. ALI, **T. DBOUK**, G. WANG, D. WANG, D. DRIKAKIS, "Advancing thermal performance through vortex generators morphing". **Nature**, Sci. Rep., 13(368), (2023). DOI: <https://doi.org/10.1038/s41598-022-25516>
- T. DBOUK**, N. VISEZ, S. ALI, I. SAHROUR, D. DRIKAKIS, "Risk assessment of pollen allergy in urban environments". **Nature**, Sci. Rep., 12 (21076), (2022). DOI: <https://doi.org/10.1038/s41598-022-24819>
- D. DRIKAKIS, **T. DBOUK**, "Flow and acoustics of unmanned vehicles". **Physics of Fluids**, 34 (10), 100402 (2022). DOI: <https://doi.org/10.1063/5.0129577>

- G. WANG, D. WANG, A. LIU, **T. DBOUK**, X. PENG, A. ALI, "Design and performance enhancement of thermal-fluid system based on topology optimization". **Applied Mathematical Modelling** 116, 168-186 (2022). DOI: <https://doi.org/10.1016/j.apm.2022.11.031>
- T. DBOUK**, D. DRIKAKIS, "The Role of Computational Science in Wind and Solar Energy: A Critical Review". **Energies**, 15(24), (2022). DOI: <https://doi.org/10.3390/en15249609>
- T. DBOUK**, D. DRIKAKIS, "Natural Ventilation and Aerosol Particles Dispersion Indoors". **Energies**, 15(14), 5101 (2022). <https://doi.org/10.3390/en15145101>
- T. DBOUK**, C. HABCHI, J.-L. HARION, D. DRIKAKIS, "Enhancement of Heat Transfer and Fluid Flow by a Poiseuille-Taylor-Couette Flow between Two Rotating Elliptically-deformed Annular Tubes". **International Journal of Heat and Fluid Flow**, 96, 109011 (2022). <https://doi.org/10.1016/j.ijheatfluidflow.2022.109011>
- T. DBOUK**, D. DRIKAKIS, "Computational Aeroacoustics of Quadcopter Drones", **Applied Acoustics**, 192, 108738 (2022). <https://dx.doi.org/10.1016/j.apacoust.2022.108738>
- T. DBOUK**, D. DRIKAKIS, "The computational fluid dynamics-based epidemic model and the pandemic scenarios", **Physics of Fluids**, 34, 027104 (2022). <https://dx.doi.org/10.1063/5.0082090>
- G. WANG, A. LIU, **T. DBOUK**, D. WANG, X. PENG, A. ALI, "Optimal shape design and performance investigation of helically coiled tube heat exchanger applying MO-SHERPA", **International Journal of Heat and Mass Transfer**, 184, 122256, (2022). <https://doi.org/10.1016/j.ijheatmasstransfer.2021.122256>
- T. DBOUK**, F. ROGER, D. DRIKAKIS, "Reducing Indoor Virus Transmission using Air Purifiers", **Physics of Fluids**, 33, 103301 (2021). <https://dx.doi.org/10.1063/5.0064115>
- T. DBOUK**, S. ARANDA-GARCÍA, R. BARCALA-FURELOS, A. RODRÍGUEZ-NÚÑEZ, D. DRIKAKIS, "Airborne infection risk during open air cardiopulmonary resuscitation". **Emergency Medicine Journal (BMJ)**, 38, 673-678, (2021). <https://dx.doi.org/10.1136/emered-2021-211209>
- T. DBOUK**, D. DRIKAKIS, "Correcting pandemic data analysis through environmental fluid dynamics". **Physics of Fluids**, 33, 067116, (2021). <https://dx.doi.org/10.1063/5.0055299>
- T. DBOUK**, D. DRIKAKIS, "On Pollen and Airborne Virus Transmission". **Physics of Fluids**, 33, 063313, (2021). <https://dx.doi.org/10.1063/5.0055845>
- T. DBOUK**, D. DRIKAKIS, "Endotracheal Tubes Design : The role of tube bending". **Symmetry**, 13, 8, (2021). <https://dx.doi.org/10.3390/sym13081503>
- T. DBOUK**, D. DRIKAKIS, "Quadcopter Drones Swarm Aeroacoustics". **Physics of Fluids**, 33, 057112, (2021). <https://dx.doi.org/10.1063/5.0052505>
- T. DBOUK**, D. DRIKAKIS, "Fluid Dynamics and Epidemiology : Seasonality and Transmission Dynamics". **Physics of Fluids**, 33, (2021). <https://dx.doi.org/10.1063/5.0037640>
- T. DBOUK**, D. DRIKAKIS, "On Airborne Virus Transmission in Elevators and Confined Spaces". **Physics of Fluids**, 33, 011905, (2021). <https://dx.doi.org/10.1063/5.0038180>
- T. DBOUK**, D. DRIKAKIS, "Weather impact on airborne coronavirus survival". **Physics of Fluids**, 32, 093312, (2020). <https://dx.doi.org/10.1063/5.0024272>
- T. DBOUK**, D. DRIKAKIS, "On respiratory droplets and face masks". **Physics of Fluids**, 32, 063303, (2020). <https://dx.doi.org/10.1063/5.0015044>
- T. DBOUK**, D. DRIKAKIS, "On coughing and airborne droplet transmission to humans". **Physics of Fluids**, 32, 053310, (2020). <https://dx.doi.org/10.1063/5.0011960>
- T. DBOUK**, S.A. BAHRANI, "Modeling of buoyancy-driven thermal convection in immersed granular beds". **International Journal of Multiphase Flows**, 134, 103471, (2020). <https://dx.doi.org/10.1016/j.ijmultiphaseflow.2020.103471>

- G. WANG, T. DBOUK, D. WANG, Y. PEI, X. PENG, H. YUAN, S. XIANG, "Experimental and numerical investigation on hydraulic and thermal performance in the tube-side of helically coiled-twisted trilobal tube heat exchanger", **International Journal of Thermal Sciences**, 153, 106328, (2020). <https://dx.doi.org/10.1016/j.ijthermalsci.2020.106328>
- H. KARKABA, T. DBOUK, C. HABCHI, S. RUSSEIL, T. LEMENAND, D. BOUGEARD, "Multi objective optimization of vortex generators for heat transfer enhancement using large design space exploration". **Chemical Engineering and Processing - Process Intensification**, 154, 107982, (2020). <https://dx.doi.org/10.1016/j.cep.2020.107982>
- C. OCTAU, T. DBOUK, M. WATREMEZ, D. MERESSE, M. LIPPERT, J. SCHIFFLER, L. KEIRSBULCK, L. DUBAR, "Liquid-solid two-phase jet in a turbulent cross-flow : Experiments and simulations". **Chemical Engineering Research & Design**, 155, 156-171, (2020). <https://dx.doi.org/10.1016/j.cherd.2020.01.004>
- H. BELKHOUA, S. RUSSEIL, T. DBOUK, M. MOBTIL, D. BOUGEARD, N.-Y. FRANCOIS, Large Eddy Simulation of boundary layer transition over an isolated ramp-type micro roughness element". **International Journal of Heat and Fluid Flow**, 80, 108492, (2019). <https://dx.doi.org/10.1016/j.ijheatfluidflow.2019.108492>
- V. SUBRAMANIAM, T. DBOUK, J.-L. Harion, "Topology optimization of conjugate heat transfer systems : A competition between heat transfer enhancement and pressure drop reduction". **International Journal of Heat and Fluid Flow**, 75, 165-184, (2019). <https://dx.doi.org/10.1016/j.ijheatfluidflow.2019.01.002>
- T. DBOUK, "A new technology for CPU chip cooling by concentrated suspension flow of non-colloidal particles". **Applied Thermal Engineering**, 146, 664-673, (2019). <https://dx.doi.org/10.1016/j.applthermaleng.2018.10.044>
- T. DBOUK, C. HABCHI, "On the mixing enhancement in concentrated non-colloidal neutrally buoyant suspensions of rigid particles using helical coiled and chaotic twisted pipes : A numerical investigation". **Chemical Engineering and Processing - Process Intensification**, 141, (2019). <https://dx.doi.org/10.1016/j.cep.2019.107540>
- T. DBOUK, "A computational framework with an Adaptive Mesh Refinement technique for concentrated suspension flows". **Particulate Science and Technology**, 1-10, (2019). <https://dx.doi.org/10.1080/02726351.2019.1624663>
- T. DBOUK, "Heat transfer and shear-induced migration in dense non-Brownian suspension flows : Modelling and simulation". **Journal of Fluid Mechanics**, 840, (2018). <https://dx.doi.org/10.1017/jfm.2018.72>
- V. SUBRAMANIAM, T. DBOUK, J.-L. HARION, "Topology optimization of conductive heat transfer devices : An experimental investigation", **Applied Thermal Engineering**, 131, 390-411, (2018). <https://dx.doi.org/10.1016/j.applthermaleng.2017.12.026>
- R. GAUTIER, T. DBOUK, M.A. CAMPESI, L. HAMON, J.-L. HARION and P. PRÉ, "Pressure-swing-adsorption of gaseous mixture in isotropic porous medium : Transient 3D modeling and validation". **Chemical Engineering Journal**, 348, 1049-1062, (2018). <https://dx.doi.org/10.1016/j.cej.2017.05.145>
- R. GAUTIER, T. DBOUK, J.-L. HARION, L. HAMON and P. PRÉ, "Pressure-Swing-Adsorption of gaseous mixture in isotropic porous medium : Numerical sensitivity analysis in CFD". **Chemical Engineering Research and Design**, 129, 314-326, (2018). <https://dx.doi.org/10.1016/j.cherd.2017.11.007>
- T. DBOUK, "A review about the engineering design of optimal heat transfer systems using topology optimization". **Applied Thermal Engineering**, 112, 841-854, (2017). <https://dx.doi.org/10.1016/j.applthermaleng.2016.10.134>
- T. DBOUK "A Suspension Balance Direct-Forcing Immersed Boundary Model for wet granular flows including obstacles". **Journal of Non-Newtonian fluid Mechanics**, 230, 68-79 (2016). <https://dx.doi.org/10.1016/j.jnnfm.2016.01.003>
- T. DBOUK, F. PERALES, F. BABIK and R. MOZUL "A DF-IBM/NSCD coupling framework to simulate immersed particle interactions". **Comput. Methods Appl. Mech. Engrg.**, 309, 610-624, (2016). <https://dx.doi.org/10.1016/j.cma.2016.05.041>
- T. DBOUK and J.-L. HARION "Performance of Optimization Algorithms Applied to Large Nonlinear Constrained Problems". **American Journal of Algorithms and Computing**, 2 (1) 32-56, (2015).
- T. DBOUK, P. MONTMITONNET, N. SUZUKI, Y. TAKAHAMA, N. LEGRAND, T. NGO and H. MATSUMOTO "Advanced roll bite models for cold and temper rolling processes". **La Metallurgia Italiana**, 4, (2015).
- T. DBOUK, P. MONTMITONNET, N. LEGRAND "Two-dimensional Roll Bite Model with lubrication for Cold Strip Rolling". **Advanced Materials Research** Vols. 966-967, 48-62, (2014). <https://dx.doi.org/10.4028/www.scientific.net/AMR.966-967.48>

**T. DBOUK**, L. LOBRY, E. LEMAIRE, and F. MOUKALLED, "Shear-induced Particles Migration : Predictions from Experimental Determination of The Particle Stress Tensor". **Journal of Non-Newtonian Fluid Mechanics**, 198, 78-95, (2013). <https://dx.doi.org/10.1016/j.jnnfm.2013.03.006>

**T. DBOUK**, L. LOBRY, E. LEMAIRE, "Normal stresses in concentrated non-Brownian suspensions". **Journal of Fluid Mechanics**, 715, 239-272, (2013). <https://dx.doi.org/10.1017/jfm.2012.516>

### Scientific Articles in peer-review conference proceedings

S.A. BAHRANI, **T. DBOUK**, J.F. MORRIS, "Déstabilisation en mode séquentiel d'un lit granulaire immergé par une source thermique". Proceeding of XIVE Colloque International Franco-Québécois : Énergies Durables, CIFQ2019, Québec, Canada, 18 June (2019).

H. BELKHOUCHE, S. RUSSEIL, **T. DBOUK**, M. MOBIL, D. BOUGEARD, N. FRANCOIS, "Influence of surface roughness elements on heat transfer in transitional flows : a cfd investigation". Proceeding of the XI International Conference on Computational Heat, Mass and Momentum Transfer, Cracow, Poland, May 21-24 (2018).

C. OCTAU, M. LIPPERT, **T. DBOUK**, A. FRAZIANI, M. WATREMEZ, L. KEIRSBULCK and L. DUBAR, "Particles transport in railway braking systems : an experimental and numerical investigation". Proceeding of the ASME 2017 Fluids Engineering Division Summer Meeting, Waikoloa, Hawaii, USA, 31-July-3-August (2017).

R. GAUTIER, **T. DBOUK**, L. HAMON, P. PRÉ, D. BOUGEARD, "Intensification d'un procédé de séparation de gaz par adsorption : étude numérique par simulations CFD 3D et influence de la géométrie du lit adsorbant". Proceeding 16ème Congrès de la Société Française de Génie des Procédés, Nancy, du 11 au 13 Juillet (2017).

V. SUBRAMANIAM, **T. DBOUK**, J.-L. HARION, "Optimisation topologique decomposantsconducteurs de chaleur : étude expérimentale". 25ème Congrès Français de Thermique, Subramaniam-SFT-2017, Marseille, du 30 Mai au 2 Juin (2017).

M.-A. CAMPESI, R. FAUTIER, **T. DBOUK**, O. MOUSSA, L. HAMON, F.-X. BLANCHET, Y. GOURIOU, J.-L. HARION, P. PRÉ, "Study of a novel heat exchanger adsorber concept for CO2 capture". Physical and Chemical Phenomena in Heat Exchangers and Multifunctional Reactors for Sustainable Technology : Eurotherm Seminar 106, Paris, France, 10-11 Octobre (2016).

F. PERALES, F. DUBOIS, Y. MONERIE, R. MOZUL, F. BABIK, **T. DBOUK**, R. MONOD, "Xper : une plateforme pour la simulation numérique distribuée d'interactions multiphysiques entre corps", CSMA2015 proceedings, 12e Colloque National en Calcul des Structures, Presqu'île de Giens, Var, France, 18-22 Mai (2015).

**T. DBOUK**, P. MONTMITONNET, H. MATSUMOTO, N. SUZUKI, Y. YAKAHAMA, N. LEGRAND, and T. NGO, "Advanced Roll Bite Models for Cold and Temper Rolling Processes". Proceeding of 9th International & 6th European Rolling Conference, Venice, Italy, June (2013).

### Pre-prints

**T. DBOUK**, D. DRIKAKIS, "An Advanced Artificial Intelligence Model for Topology Optimization of Conjugated Heat Transfer Designs".

**T. DBOUK**, "AdsorpReactingFoam®, a computational platform for multi-component adsorption and reactive flows".

**T. DBOUK**, "VOC pollutants reduction in indoor-environment by adsorptive materials and fresh air ventilation : CFD scenarios modeling, simulation and validation".

M. REZAEI, **T. DBOUK**, F. DELABRE, B. DUMUR, V. FLORQUIN, G. VANDEN-BOSSCHE, D. BOUGEARD, "Experimental and numerical investigations of turbulent fluid flow in industrial silencers".

**T. DBOUK**, J. DIRKER, V. FACHINOTTI and L.G. PAGE, "Necessary factors for robust topology optimization methods : A numerical benchmark applied to generated-heat in surface-to-point removal".

## HDR and PhD Manuscripts

T. DBOUK "Topology Optimization of Complex Thermofluid Flows and Systems: MultiPhysics Multiscale Modeling and Design", Habilitation Degree - **HDR (November 2019)**, **University of Polytechnique Hauts-de-France**, Valenciennes, France. <https://tel.archives-ouvertes.fr/tel-02493044>

T. DBOUK "Rheology of concentrated suspensions and shear-induced particles migration", **PhD in Physics (December 2011)**, **University of Nice-Sophia Antipolis**, LPMC UMR - CNRS 7336, Nice, France. <https://tel.archives-ouvertes.fr/tel-00673964v1>

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### ● INTERNATIONAL SCIENTIFIC EDITORIAL BOARD – PEER-REVIEW SCIENTIFIC JOURNALS

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1- **Guest Editor**, Journal : Physics of Fluids (American Institute of Physics- AIP). Special Issue "**Flow and Plants**" Submission Deadline: **December, 2023**.

2- **Guest Editor**, Journal : Frontiers in Mechanical Engineering. Special Issue "Heat and mass transfer in multifunctional heat exchangers/reactors : Measurements, Multisdisciplinary design and optimization ". Submission Deadline : **June, 2022**.

3- **Guest Editor**, Journal : Physics of Fluids (American Institute of Physics- AIP). Special Issue "**Flow and Acoustics of Unmanned Vehicles**" Submission Deadline: **December 31, 2021**.  
<https://publishing.aip.org/publications/journals/special-topics/phf/flow-and-acoustics-of-unmanned-vehicles/>

4- **Guest Editor**, Journal : Applied Sciences (MDPI). Special Issue "**Artificial Intelligence and Emerging Technologies**" [https://www.mdpi.com/journal/applsci/special\\_issues/AI\\_Technologies](https://www.mdpi.com/journal/applsci/special_issues/AI_Technologies)

A special issue of *Applied Sciences* (ISSN 2076-3417). This special issue belongs to the section "[Computing and Artificial Intelligence](#)". Deadline for manuscript submissions: **20 September 2021**.

5- **Guest Editor**, Journal : Inventions (MDPI). Special Issue "**Innovative Technologies for Cardiovascular and Respiratory Diseases**" [https://www.mdpi.com/journal/inventions/special\\_issues/cardiovascular\\_respiratory](https://www.mdpi.com/journal/inventions/special_issues/cardiovascular_respiratory)

A special issue of *Inventions* (ISSN 2411-5134). This special issue belongs to the section "[Inventions and Innovation in Applied Chemistry and Physics](#)". Deadline for manuscript submissions: **31 August 2021**.

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### ● SCIENTIFIC COMMUNICATIONS (ORAL AND/OR POSTER)

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17 May **2022**, IFPEN, Lyon, France. 5<sup>th</sup> French/Belgian OpenFOAM® Users Conference, "Airborne Virus Transmission Modeling, Simulation and Forecasting". (**Oral**)

18 June **2021**, OpenFOAM® Workshop - TU Delft Institute for Computational Science and Engineering, "Airborne Virus Transmission Modeling, Simulation and Forecasting". **Oral** ([Invited Speaker](#) - online).

17 April **2021**, European Consortium for Mathematics in Industry (ECMI), "Present and Future of Modelling and Simulation of Airborne Virus Transmission". **Oral** ([Invited Speaker](#) - online).

05-06 October **2020**, V-Applied-2020-International Webinar on Applied Science "Advanced Modeling and Simulation Platform for COVID-19 Airborne Transmission". **Oral** ([Invited Speaker](#) - online).

16-19 June **2019**, CIFQ, CANADA (**2019**) "Déstabilisation en mode séquentiel d'un lit granulaire immergé par une source thermique" (**Oral**)

12-13 June **2019**, 4th French OpenFOAM® users conference, Marseille, France. "Buoyancy-driven instability of immersed granular bed of micro-particles". (**Oral**)

11 June **2018**, ECCOMAS, ECCM 6, ECFD7, Glasgow, UK. Multiobjective topology optimization applied to conjugate heat transfer problem. (**Oral**)

23-24 May **2018**, 3<sup>rd</sup> French OpenFOAM® users conference, Valenciennes, France. "Research and development activities using OpenFOAM at the Energy Engineering Department of IMT Lille Douai". **Oral**

21-24 May **2018**, XI-th International Conference on Computational Heat, Mass and Momentum Transfer (ICCHMT). Cracow, Poland. "Influence of surface roughness elements on heat transfer in transitional flows: a cfd numerical investigation". **Poster**

16 May **2018**, Journée thématique (*Thermique dans les écoulements de fluides complexes*), Société Française de thermique (SFT), "Heat transfer and shear-induced migration in dense non-Brownian suspension flows: Modelling and Simulation". **Oral (Invited Speaker)**.

07 November **2017**, Journée Jeunes Chercheurs 2017 (JJC'17) – GEPROC UGÉPE, Douai, France. "Infrared Thermal Measurements in Conductive Heat Transfer Tree-Like Structures Obtained by Topology Optimization". **Poster**

07 November **2017**, Journée Jeunes Chercheurs 2017 (JJC'17) – GEPROC UGÉPE, Douai, France. "Optimisation de forme d'un adsorbent échangeur de chaleur". **Poster**

07 November **2017**, Journée Jeunes Chercheurs 2017 (JJC'17) – GEPROC UGÉPE, Douai, France. "Intensification du transfert de chaleur dans les échangeurs embarqués par structurations de surface". **Poster**

30 May - 02 June **2017**, 25ème Congrès Français de Thermique, Marseille, France. "Optimisation topologique des composants conducteurs de chaleur: étude expérimentale". **Oral + Poster**

03 May **2017**, Invited Speaker, Scientific Seminar, Notre Dame University, Zok Mosbeh, Beirut, Lebanon. "Gas separation in packed bed of adsorbing porous medium: Modeling and Simulation". **Oral**

28 April **2017**, IMT National Conference, Colloque « L'énergie en révolution numérique », Paris, France. "Numerical optimization platform developments for designing optimal heat exchangers". **Poster**

24 April **2017**, IMT Research Seminar, University of Lille, Villeneuve d'Ascq, France. "Numerical optimization platform developments for designing optimal heat exchangers". **Poster**

21-22 March **2017**, 2ndes journées françaises des utilisateurs de OpenFOAM, Nevers, France. "TOPOF: Topology Optimization Platform in OpenFOAM". **Oral**

30-31 January **2017**, 6èmes Journées de l' Association Française de l'Adsorption, Paris, France. "Simulations numériques 3D d'un procédé de séparation de gaz par adsorption (PSA)". **Oral**

10-11 November **2016**, Invited Speaker, Annual Meeting on Rheology, Alicante, Spain. "Dynamic-Scale Modeling of non Brownian suspensions including suspension/structure interactions". **Oral**

10-11 October **2016**, Eurotherm Seminar 106, Paris, France. Physical and Chemical Phenomena in Heat Exchangers and Multifunctional Reactors for Sustainable Technology, "Study of a novel heat exchanger adsorber concept for CO<sub>2</sub> capture". **Oral**

06 October **2016**, Journée Jeunes Chercheurs 2016 (JJC'16) – GEPROC UGÉPE, Louvain, Belgium. "Topology optimization of conductive heat transfer devices: An experimental investigation". **Poster**

30 June **2016**, Journée des Doctorants 2016 (JDD'16), Douai France. "Topology optimization of conductive heat transfer devices: An experimental investigation". **Poster\*** (\* : Best Poster Award)

19-23 June **2016**, 5th International Conference on Engineering Optimization, Iguassu Falls, Brazil. "Topology optimization of 2D and 3D heat conduction structures". **Oral**

31 May - 03 June **2016**, Congrès Français de Thermique, Toulouse, France. "Optimisation topologique 3D des systèmes de conduction de la chaleur". **Poster**

18 May **2016**, Journée des utilisateurs OpenFOAM, Rouen, Normandie, France. "Dynamic-Multi-Scale Modeling and Simulation of Immersed Granular Flows over Obstacles". **Oral**

15-17 July **2015**, International conference: 17th British-French-German Conference on Optimization, BFG 2015, Imperial College, London, UK. "An optimization algorithm of high performance for inequality-constrained bounded nonlinear optimization problems". **Oral**

18-22 May **2015**, International conference: 12e Colloque National en Calcul des Structures, CSMA 2015, Presqu'île de Giens (Var), France. "Xper : une plateforme pour la simulation numérique distribuée d'interactions multiphysiques entre corps". **Poster**

09-11 July **2014**, International conference: Modeling Granular Media Across Scales 2014, Montpellier, France. 'Numerical Modeling of the Dynamics of Immersed Granular Materials'. **Oral**

22-24 June **2014**, The 6th International Conference on Tribology in Manufacturing Processes & Joining by Plastic Deformation, Darmstadt, Germany: ‘Advanced Roll Bite Models for Cold and Temper Rolling Processes’. **Oral**

5-6 Nov **2013**, Workshop on Numerical Modelling of Grains/Fluid Flows, ENS, Lyon, France: ‘A Suspension Balance Model for the flows of non-Brownian Suspensions of hard spheres’. **Oral**

10-12 June **2013**, The 9th International Rolling Conference and the 6th European Rolling Conference, Venice, Italy: ‘Advanced Roll Bite Models for Cold and Temper Rolling Processes’. **Oral**

05-10 August **2012**, The 16th International Congress on Rheology, Lisbon, Portugal: ‘Normal Stresses in non-Brownian suspension’. **Poster**

23 January **2012**, Les Rencontres Niçoises de Mécanique des Fluides, Laboratoire Jean-Alexandre Dieudonné, Nice, France: ‘Rheology of concentrated suspensions and Shear-induced migration’. **Oral**

9-13 October **2011**, 83rd Annual Meeting of the Society of Rheology, Cleveland, Ohio, USA: ‘Normal stresses in concentrated non-colloidal suspensions (Experiments and Simulations)’. **Poster**

13-16 June **2011**, 6th OpenFOAM Workshop, Penn state, USA: ‘An Incompressible Multi Phase Solver’. **Oral**

18-19 Nov **2010**, GISEC 2010, Nice, France: ‘[Normal stress measurements in non-Brownian Suspensions](#)’. **Oral**

7-9 April **2010**, 6th Annual European Rheology Conference (AERC), Göteborg, Sweden: ‘Normal stresses in sheared non-Brownian suspensions’. **Oral**

27 Novembre **2009**, le Groupe Français de Rhéologie (GDR MePhy), Paris, France: ‘Measurements of Normal Stresses in sheared Stokesian suspensions’. **Oral**

15-17 April **2009**, 5th Annual European Rheology Conference (AERC), Cardiff, United Kingdom: ‘Particle migration in suspensions flowing between rotating parallel-plates: The role of the secondary flow’. **Poster**

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## ● PROJECTS: RESEARCH, DEVELOPMENT AND INNOVATION

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**Project no.1** (January 2012 – June 2013)

**Host Institution:** CEMEF, Mines-ParisTech, Sophia-Antipolis, France

**Research Topic:** Advanced Solver development for simulating the rolling loads in a cold strip rolling process (with lubrication)

**Partners:** Dr. Nicolas Legrand (Acelor-Mittal Research, France), Prof. Pierre Montmitonnet (CEMEF, Mines-ParisTech)

**Funding:** ≈90000 euros, Arcelor-Mittal (France)

**Project no.2** (September 2013 – September 2014)

**Host Institution:** CEA-Cadarache, France (IRSN)

**Research Topic:** Immersed Boundary Methods for nuclear safety applications

**Partners:** Prof. Frédéric Perales (IRSN, Cadarache, France)

**Funding:** ≈50000 euros, IRSN, France

**Project no.3** (April 2015 – April 2016)

**Host Institution:** IMT Lille-Douai, France

**Research Topic:** Pressure-swing adsorption of gaseous mixture in isotropic porous medium: Transient 3D Modeling and Validation

**Partners:** Prof. Jean-Luc Harion (IMT Lille-Douai), Prof. Pascaline Pré (IMT Atlantique, Nantes)

**Funding:** ≈104000 euros, Institut Mines-Télécom (France)

**Project no.4** (January 2016 – December 2018)

**Host Institution:** IMT Lille-Douai, France

**Research Topic:** Topology optimization of conjugated heat transfer devices: experimental and numerical investigation

**Partners:** Prof. Jean-Luc HARION (IMT Lille-Douai)

**Funding:** ≈50000 euros IMT Lille-Douai (ARMINES contract)

**Project no.5** (January 2017 – January 2020)

**Host Institution:** IMT Lille-Douai, Douai, France – Valeo Group, Paris, France

**Research Topic:** Optimization and Design of innovative heat exchangers



**Partners:** N.-Y. François (VALEO R , Paris)

**Funding:** >250000 euros, VALEO R Group Thermal Systems (inside a 6 years Industrial chair NEO (Numerical and Experimental Optimization platform for efficient design of automotive heat exchangers))

**Project no.6** (January 2016 – September 2019)

**Host Institutions :** ALSTOM Research group and LAMIH, University of Valenciennes, France

**Research Topic:** Particles transport emitted during railway braking systems: experimental and numerical investigations

**Partners:** Prof. Laurent. Keirsbulck (LAMIH, University of Haut-de-France)

**Funding:** 250000 euros ALSTOM Research Group (France)

**Project no. 7** (September 2019 – April 2020)

**Host Institutions :** IMT Lille Douai, France – University of Zhengzhou, China

**Research Topic:** Optimization and Design of innovative heat exchangers

**Partners:** Prof. Dingbiao Wang, Dr. Guanghui Wang (University of Zhengzhou, China)

**Funding:** ≈20000 euros (Chinese Academy of Sciences)

**Project no. 8** (April 2016 – December 2017)

**Host Institution:** IMT Lille-Douai, Boet-Stopson Research, Lille, France

**Research Topic:** CFD 3D modeling and simulation of isothermal turbulent fluid flows in industrial silencers: uncertainty and quantification of pressure drop

**Partners:** Florian DELABRE (Boet-Stopson Research Group)

**Funding:** ≈60000 euros, Boet-Stopson R – Lille, France

**Project no.9** (September 2018 – December 2020)

**Host Institutions:** Lebanese International University (LIU)-Lebanon

**Research Topic:** Design space exploration to find optimal designs of vortex generators for heat transfer enhancement

**Partners:** C. Habchi (NDU University, Lebanon) and T. Lemenand (Angers University, France)

**Funding:** ≈50000 euros, LIU University - Lebanon (50%) and IMT Lille-Douai - France (50%)

**Project no.10** (June 2018 – June 2019)

**Host Institutions:** IMT Lille-Douai, France, EcoTech-Ceram startup (Rivesaltes, France)

**Research Topic:** Optimization and Design of "plug and play" waste heat storage system (Eco-Stock®)

**Partners:** Guilhem Dejean (Ecotech-Ceram R&D)

**Funding:** ≈50000 euros, BPI Bank, France

**Project no.11** (June 2023 – June 2024) - BQRI2023

**Host Institutions:** CORIA, CNRS UMR 6614 (Saint-Etienne-du-Rouvray, France)

**Research Topic:**

**Partners:** Mahmoud KHALED (BIU, LIU, Beirut, Lebanon)

**Funding:** ≈18000 euros, UROUEN, France

**Project no.12** (September 2023 – September 2026) - OMAC

**Host Institutions:** CORIA, CNRS UMR 6614 (Saint-Etienne-du-Rouvray, France)

**Research Topic:** Optimization of Multicomponent Adsorption Columns for enhanced carbon capture and hydrogen production

**Partners:** Mostafa SHADLOU (INSA Rouen)

**Funding:** ≈60000 euros, Normandy University, France

**Project no.13** (January 2024 – January 2027) - DISPERSE

**Host Institutions:** CORIA, CNRS UMR 6614 (Saint-Etienne-du-Rouvray, France) – BIU, Beirut, Lebanon

**Research Topic:** Airborne pollutant particles dispersion close to an emitting source in an urban environment: Modeling and Simulations

**Partners:** Mahmoud KHALED (BIU, LIU, Beirut, Lebanon)

**Funding:** ≈60000 euros, BIU-Normandy Region (50 %-50%), Lebanon-France

**Project no.14** (September 2024 – September 2027) - REMOVE

**Host Institutions:** CORIA, CNRS UMR 6614 (Saint-Etienne-du-Rouvray, France) – BIU, Beirut, Lebanon

**Research Topic:** Innovative Technologies for Airborne Pollutant Particles Removal from Urban Environment

**Partners:** Mahmoud KHALED (BIU, LIU, Beirut, Lebanon)

**Funding:** ≈60000 euros, (BIU-Beirut, Normandy Region, 50%-50%), Lebanon-France

**Project no.15** (September 2024 – September 2026) - HELIOS

**Host Institutions:** University of Rouen Normandy

**Research Topic:** De la caractérisation spatiale, sanitaire et sociales des îlots de chaleurs urbains et des risques de submersion et de débordement de cours d'eau à l'exploration et l'évaluation de solutions d'adaptions fondées sur la nature dans l'estuaire de la Seine : Le Havre Seine Métropole, Caux Seine Agglo et la Métropole Rouen Normandie comme territoires d'expérimentation

**Partners:** 9 different Labs. (University of Rouen-Normandy)

**Funding:** ≈1 M€, Multi : ANR, Métropole Rouen Normandie, Pays de la Loire Region, Cergy Region(Paris).

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## ● PRIZES

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**Winner of best paper award "Proceeding of 3<sup>rd</sup> International Conference on Experimental and Numerical Flow and Heat Transfer" (ENFHT'18), 12-14 April, 2018, Budapest, Hungary.**

**Winner of the prize "Best French PhD Thesis developed with OpenFOAM®"**

**Association Foam-U, second annual meeting, 21-22 Mars 2017, Nevers, France. <http://www.foam-u.fr/>**

**Winner of best Poster Award :**

**30 June 2016, Journée des Doctorants 2016. Authors : V. Subramaniam, T. Dbouk and J.-L. Harion**

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## ● ENVELOPPES SOLEAU (INNOVATION - FRANCE)

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**Year 2017: 3 Enveloppes Soleau**

**Year 2018: 4 Enveloppes Soleau**

**Year 2023: 2 Enveloppes Soleau**

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## ● DEVELOPED NUMERICAL SOLVERS FOR R&D PURPOSES

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2010/2011: 3D Solver development for immersed granular flows (suspensions of rigid particles immersed in a fluid).

Solver Name: **SbmFoam** (for simple shear flows)

Hyper link: <https://openfoamwiki.net/index.php/Contrib/SbmFoam>

Integration Library: OpenFOAM® Library (C++) - under the GNU (GPL) General Public Licence.

2011/2012: 3D Solver development for immersed granular flows (suspensions of rigid particles immersed in a fluid).

Solver Name: **SbmGeneralFoam** (for general flows)

Hyper link: <http://dx.doi.org/10.1016/j.jnnfm.2013.03.006>

Integration Library: OpenFOAM® Library (C++) - under the GNU (GPL) General Public Licence.

2012/2013: Advanced 2D Solver development for simulating the rolling loads in a cold strip rolling process (with lubrication).

Solver Name: **RollGap®**

Integration Library: Fortran90®.

2013/2014: 3D solver for fluid/structure interactions (wet granular flows) using the immersed boundary method coupled to a non-smooth contacts dynamics method.

Solver Name: **PELICANS\_IBM\_LMGC**

Hyper link: [https://csm2015.ec-nantes.fr/resumes/r\\_FJFO3RX6.pdf](https://csm2015.ec-nantes.fr/resumes/r_FJFO3RX6.pdf)

Integration Library: Xper: IRSN-LMGC90 research laboratories open source C++/Fortran developed library.

2012/2015: 3D solver for suspension/structure interactions (suspension flows over obstacles) using the immersed boundary method coupled to a suspension balance model.

Solver Name: **SbIBMFoam**

Hyper link: <http://dx.doi.org/10.1016/j.jnnfm.2016.01.003>

Integration Library: OpenFOAM® Library (C++) - under the GNU (GPL) General Public Licence.

2014/2015: Topology optimization 3D solver for designing optimum heat conduction systems.

Solver Name: **TopOptHCFoam**

|                          |  |
|--------------------------|--|
| Integration Library:     | OpenFOAM® Library (C++) - under the GNU (GPL) General Public Licence.  |
| 2017/2018:               | 3D Solver for quasi-compressible immersed granular flows (suspensions of rigid particles immersed in a fluid) including heat transfer, shear-induced migration and buoyancy effects. |
| Solver Name:             | <b>SBMHTFoam</b>   |
| Integration Library:     | OpenFOAM® Library (C++) - under the GNU (GPL) General Public Licence.  |
| 2015/2018:               | 3D Topology Optimization Solver for Multi-Objective Conjugate Heat Transfer Problems (steady laminar flows).   |
| Solver Name:             | <b>MOadjOptChtFoamMMA®</b>   |
| Optimization Algorithm : | MMA, GCMMA (Svanberg, 1987; Svanberg, 2002)  |
| Integration Library:     | OpenFOAM® Library (C++) - under the GNU (GPL) General Public Licence.  |
| 2017/2019:               | 3D Solver for multicomponent adsorption and reactive flows with heat transfer.   |
| Solver Name:             | <b>AdsorpReactingFoam®</b>   |
| Integration Library:     | OpenFOAM® Library (C++) - under the GNU (GPL) General Public Licence.  |
| 2020:                    | 3D Solver for droplet-mixture impacting a porous surface including multi-type physics interaction.   |
| Solver Name:             | <b>DropletImpactReactingParcelFoam®</b>  |
| Integration Library:     | OpenFOAM® Library (C++) - under the GNU (GPL) General Public Licence.  |
| 2021:                    | 3D Solver for the Aeoaoustics Predictions of Multicopter Drones and Unmanned Vehicles.   |
| Solver Name:             | <b>AeroacousticFoam®</b>   |
| Integration Library:     | OpenFOAM® Library (C++) - under the GNU (GPL) General Public Licence.  |
| 2023/2024:               | 3D Solver for the Coupling of UVC Fields and Fluid Flows   |
| Solver Name:             | <b>UVCreatingParcelFoam®</b>   |
| Integration Library:     | OpenFOAM® Library (C++) - under the GNU (GPL) General Public Licence.  |

## ● SOME EXTERNAL SCIENTIFIC COLLABORATIONS (INSTITUTIONS)

- University of Nicosia, Nicosia, Cyprus
- University of Cote d'Azur, France
- IMT Atlantique, Nantes, France
- University of Nantes, Nantes, France
- University of Polytechnique Hauts-de-France, Valenciennes, France
- City College of New York, USA
- Manhattan College, New York, USA
- Zhengzhou University, Zhengzhou, China
- American University of Beirut (AUB), Beirut, Lebanon
- Lebanese University, Beirut, Lebanon
- NDU University, Zouk Mosbeh, Lebanon
- LIU University, Beirut, Lebanon
- The International University of Beirut (BIU), Beirut, Lebanon

## ● ORGANIZATION OF INTERNATIONAL SCIENTIFIC EVENTS

- **Eurotherm Seminar 106**, Physical and chemical phenomena in heat exchanger and multifunctional reactor for sustainable technology, 10-11 October 2016, Paris, France.  
<https://eurotherm106.sciencesconf.org/>
- **9ème Journée des Jeunes Chercheurs**, GEPROC et l'UgéPE, 07 November 2017, Douai, France.  
[http://conference.mines-douai.fr/GEPROC\\_UGEPE\\_2017/](http://conference.mines-douai.fr/GEPROC_UGEPE_2017/)
- **3rd French OpenFOAM® users conference** (Joint Franco/Belgian OpenFOAM users conference), 23-24 May 2018, Valenciennes, France.

## ● TEACHING COURSES EXPERIENCE

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**Label of course no.1:** Fluid Mechanics

**Level:** 2<sup>nd</sup> Year, 1<sup>st</sup> Cycle, Mechanical Engineering

**Credits:** 6 ECTS

**Keywords :** Fluid Statics; Fluid Dynamics; Flow Regimes; Conservation Laws; Applications;

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**Label of course no.2:** An Introduction to PINCH Analysis & Process Integration.

**Level:** Masters

**Keywords :** Pinch Technology; Heat Integration; Exergy; Heat Transfer; Fluid Mechanics;

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**Label of course no.2:** Fluid Flow Networks Analysis and Design

**Level:** 1<sup>st</sup> Year, 1<sup>st</sup> Cycle, Chemical and Process Engineering (University Institute of Technology)

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**Label of course no.3:** Crystallization and Evaporation Process

**Level:** 1<sup>st</sup> Year, 1<sup>st</sup> Cycle, Chemical and Process Engineering (University Institute of Technology)

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## ● Ph.D. STUDENTS SUPERVISOR

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**PhD Student no.1:** V. SUBRAMANIAM

**Topic:** Topology Optimization of Conjugated Heat Transfer Devices: Experimental and Numerical Investigation

**Funded by:** IMT Lille Douai®

**Defended :** 07 December 2018

**PhD Student no.2:** H. BELKHOUCHE

**Topic:** Optimization of Heat Exchangers for Automotive applications (CFD and experiments)

**Funded by:** VALEO® - Thermal Systems®

**Date of defense :** 13 December 2019

**PhD Student no.3:** C. OCTAUCHE

**Topic:** Particles transport in a railway braking system (modeling, simulations and experiments)

**Funded by:** ALSTOM®

**Defended :** 15 November 2019

**PhD Student no.4:** H. KARKABA

**Topic:** Large design space exploration for designing optimal vortex generators for heat transfer enhancement

**Funded by:** LIU University (Lebanon), IMT Nord Europe, University of Lille (France)

**Defended :** Q1 of 2021

**PhD Student no.5:** G. WANG

**Topic:** Topology optimization and design of thermofluid systems

**Funded by:** Chinese Academy of Sciences (University of Zhengzhou)

**Defended :** Q4 of 2021

**PhD Student no.6:** M. NADAMANI

**Topic:** Optimization of Adsorption Columns

**Funded by:** University of Rouen Normandy, CORIA, CNRS UMR 6614

**Expected date of defense :** October 2026

**PhD Student no.7:** O. RAHAL

**Topic:** Innovative Technologies for Airborne Pollutant Particles Removal from Urban Environment  
**Funded by:** (BIU-Beirut, Normandy Region, 50%-50%), Lebanon-France  
**Expected date of defense :** January 2027

**PhD Student no.8:** O. HAMAD

**Topic:** Airborne pollutant particles dispersion close to an emitting source in an urban environment: Modeling and Simulations  
**Funded by:** (BIU-Beirut, Normandy Region, 50%-50%), Lebanon-France  
**Expected date of defense :** January 2027

### Supervised Postdocs

**Postdoc no.1:** R. GAUTIER

**Topic:** Adsorption phenomena modeling and simulation in CFD for gas separation processes  
**Funded by:** IMT Lille Douai®  
**Period :** (April 2015 – April 2016)

### Supervised Research Engineers

**Research Engineer no.1:** M. REZAEI

**Topic:** Modeling and simulation of pressure drop and noise reduction in industrial silencers  
**Funded by:** Boët-Stopson®, Lille, France  
**Period :** April 2017 – January 2018

### Supervised Masters-R students

**Masters R Student no.1:** T.C. NGUYEN

**Topic:** Spatial Filters in Topology Optimization  
**Defended :** September 2017

**Masters R Student no.2:** A. KASSOU

**Topic:** Modeling and simulation of pollutants in air in an indoor environment  
**Defended :** November 2018

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## ● INTERNATIONAL SCIENTIFIC JURY MEMBER – Providing PhD Degree Level

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**1- Reporter (Evaluator) and Jury Member: PhD defence of Dr. Wassim ABDEI NOUR.** Topology Optimization of High Efficiency Heat Exchangers using the Level Set Method and Anisotropic Mesh Adaptation. Université PSL, Paris-France, **23 November 2023.**

**2- Reporter (Evaluator) and Jury Member: PhD defence of Dr. Rima ARIDI.** Récupération de chaleur par intégration de générateur de vorticit , hybridation avec des g n rateurs thermo lectriques, utilisation d' nergies renouvelables et analyse du cycle de vie. University of Angers, Angers, France, **08 September 2023.**

**3- Reporter (Evaluator) and Jury Member: PhD defence of Dr. Moeen EL BAST.** Etudes Num riques et Exp rimentales pour la Conception d'un R acteur de Liqu faction Hydrothermale. **IMT Atlantique**, Nantes, France, **15 December 2022.**

**4- Reporter (Evaluator) and Jury Member: PhD defence of Dr. Quentin HOLKA.** Optimisation topologique des  changeurs de chaleur en r gime turbulent avec la m thode des porosit s. MINES ParisTech, Universit  de recherche Paris Sciences et Lettres, PSL Research University, Paris, France, **27 April 2022.**

**5- Reporter (Evaluator) and Jury Member: PhD defence of Dr. Cl ante LANGR E.** CFD simulation of deflagrations in open congested environment for industrial accident application. **University of Rouen-Normandie**, Rouen, France, **08 December 2021.**

**6- Jury Member: PhD defence of Dr. Omran ABUSHAMMALA.** *Optimal Helical Tube Design for Intensified Heat / Mass Exchangers.* **University of Lorraine**, Nancy, France, **18 Sep. 2020.**

**7- Jury Member: PhD defence of Dr. Walid ABOU HWEIJ.** *Numerical simulation of wall-bounded flows through screen-type static mixers.* **American University of Beirut**, Beirut, Lebanon, **27 Apr. 2020.**

**8- Jury Member: PhD defence of Dr. Florian DUGAST.** *Optimisation topologique en convection thermique avec la méthode de Lattice Boltzmann.* **University of Nantes, Nantes, France, 15 Oct. 2018.**

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● **INTERESTS AND HOBBIES**

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**Sports:** Running, reading, swimming, soccer, ping-pong and cycling. Completed two marathons (nice-cannes marathon 2009, and Paris marathon 2014) and more than 10 half-marathons and tens of 10k.

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